

CONTRACT: C201654 U-3613B

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

STATE PROJECT 34961.3.3 I.D. NO. U-3613B
 F.A. PROJECT MASTP-1708(I)
 COUNTY PITT
 DESCRIPTION GREENVILLE - SR 1708
(FIRE TOWER RD.) FROM WEST OF NC 11-903
TO SR 1700 (OLD TAR RD/EVANS RD.)

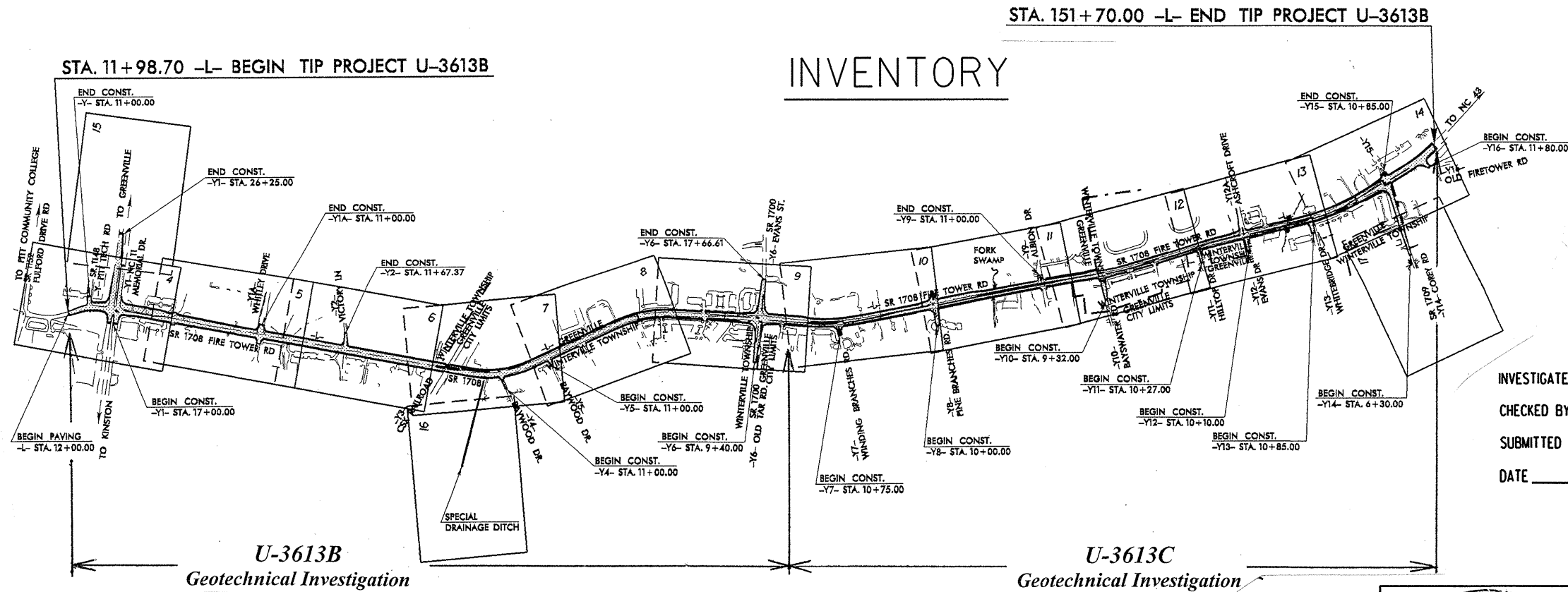
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613B	1	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34961.1.2	MA-STP-1708(I)	PE	
34961.2.2	STP-1708(3)	RAW, UTIL.	
34961.3.3	STP-1708(5)	CONST.	

CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.



INVESTIGATED BY N. T. ROBERSON PERSONNEL JWB
 CHECKED BY C. M. GILLIAM LBM
 SUBMITTED BY L. T. PACKER GEJ
 DATE 09/05/01

DRAWN BY: W. D. FIELDS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

SEAL





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NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
GEOTECHNICAL UNIT

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
U-3613B	8. 2220901	2	12

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

SOIL DESCRIPTION										GRADATION										ROCK DESCRIPTION										TERMS AND DEFINITIONS																																							
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS PER FOOT ACCORDING TO STANDARD PENETRATION TEST (AASHTO T206, ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION, AND OTHER PERTINENT FACTORS SUCH AS MINERALOGICAL COMPOSITION, ANGULARITY, STRUCTURE, PLASTICITY, ETC. EXAMPLES: VERY STIFF, GRAY SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6										WELL GRADED- INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE UNIFORM. INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED- INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES. ANGULARITY OF GRAINS THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: <u>ANGULAR</u> , <u>SUBANGULAR</u> , <u>SUBROUNDED</u> , OR <u>ROUNDED</u> .										HARD ROCK IS NON-COASTAL PLAIN MATERIAL THAT WHEN TESTED, WOULD YIELD SPT REFUSAL. AN INFERRED ROCK LINE INDICATES THE LEVEL AT WHICH NON-COASTAL PLAIN MATERIAL WOULD YIELD SPT REFUSAL. SPT REFUSAL IS PENETRATION BY A SPLIT SPOON SAMPLER EQUAL TO OR LESS THAN 0.1 FOOT PER 60 BLOWS. IN NON-COASTAL PLAIN MATERIAL, THE TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF WEATHERED ROCK. ROCK MATERIALS ARE TYPICALLY DIVIDED AS FOLLOWS: WEATHERED ROCK (WR)  NON-COASTAL PLAIN MATERIAL THAT YIELDS SPT N VALUES > 100 BLOWS PER FOOT. CRYSTALLINE ROCK (CR)  FINE TO COARSE GRAIN IGNEOUS AND METAMORPHIC ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES GRANITE, GNEISS, GABBRO, SCHIST, ETC. NON-CRYSTALLINE ROCK (NCR)  FINE TO COARSE GRAIN METAMORPHIC AND NON-COASTAL PLAIN SEDIMENTARY ROCK THAT WOULD YIELD SPT REFUSAL IF TESTED. ROCK TYPE INCLUDES PHYLLITE, SLATE, SANDSTONE, ETC. COASTAL PLAIN SEDIMENTARY ROCK (CP)  COASTAL PLAIN SEDIMENTS CEMENTED INTO ROCK, BUT MAY NOT YIELD SPT REFUSAL. ROCK TYPE INCLUDES LIMESTONE, SANDSTONE, CEMENTED SHELL BEDS, ETC.										ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER. AQUIFER - A WATER BEARING FORMATION OR STRATA. ARENACEOUS - APPLIED TO ROCKS THAT HAVE BEEN DERIVED FROM SAND OR THAT CONTAIN SAND. ARGILLACEOUS - APPLIED TO ALL ROCKS OR SUBSTANCES COMPOSED OF CLAY MINERALS, OR HAVING A NOTABLE PROPORTION OF CLAY IN THEIR COMPOSITION, AS SHALE, SLATE, ETC. ARTESIAN - GROUND WATER THAT IS UNDER SUFFICIENT PRESSURE TO RISE ABOVE THE LEVEL AT WHICH IS ENCOUNTERED, BUT WHICH DOES NOT NECESSARILY RISE TO OR ABOVE THE GROUND SURFACE. CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (REC.) - TOTAL LENGTH OF ALL MATERIAL RECOVERED IN THE CORE BARREL DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. DIKE - A TABULAR BODY OF IGNEOUS ROCK THAT CUTS ACROSS THE STRUCTURE OF ADJACENT ROCKS OR CUTS MASSIVE ROCK. DIP - THE ANGLE AT WHICH A STRATUM OR ANY PLANAR FEATURE IS INCLINED FROM THE HORIZONTAL. DIP DIRECTION (DIP AZIMUTH) - THE DIRECTION OR BEARING OF THE HORIZONTAL TRACE OF THE LINE OF DIP, MEASURED CLOCKWISE FROM NORTH. FAULT - A FRACTURE OR FRACTURE ZONE ALONG WHICH THERE HAS BEEN DISPLACEMENT OF THE SIDES RELATIVE TO ONE ANOTHER PARALLEL TO THE FRACTURE. FISSILE - A PROPERTY OF SPLITTING ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOOD PLAIN (F.P.) - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION (FM.) - A MAPPABLE GEOLOGIC UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MOTTLED (MOT.) - IRREGULARLY MARKED WITH SPOTS OF DIFFERENT COLORS. MOTTLING IN SOILS USUALLY INDICATES POOR AERATION AND LACK OF GOOD DRAINAGE. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SILL - AN INTRUSIVE BODY OF IGNEOUS ROCK OF APPROXIMATELY UNIFORM THICKNESS AND RELATIVELY THIN COMPARED WITH ITS LATERAL EXTENT, WHICH HAS BEEN EMPLACED PARALLEL TO THE BEDDING OR SCHISTOSITY OF THE INTRUDED ROCKS. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLANE. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS IN OR B.P.F. OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL IS LESS THAN 0.1 FOOT PENETRATION WITH 60 BLOWS. STRATA CORE RECOVERY (SREC.) - TOTAL LENGTH OF STRATA MATERIAL RECOVERED DIVIDED BY TOTAL LENGTH OF STRATUM AND EXPRESSED AS A PERCENTAGE. STRATA ROCK QUALITY DESIGNATION (S.R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS WITHIN A STRATUM EQUAL TO OR GREATER THAN 10 CENTIMETERS DIVIDED BY THE TOTAL LENGTH OF STRATA AND EXPRESSED AS A PERCENTAGE. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER.																																							
SOIL LEGEND AND AASHTO CLASSIFICATION										MINERALOGICAL COMPOSITION										COMPRESSIBILITY										PERCENTAGE OF MATERIAL										GROUND WATER										MISCELLANEOUS SYMBOLS										ABBREVIATIONS									
GENERAL CLASS. GRANULAR MATERIALS (> 5% PASSING #200) SILT-CLAY MATERIALS (> 85% PASSING #200) ORGANIC MATERIALS										MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.										SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50										ORGANIC MATERIAL GRANULAR SOILS SILT-CLAY SOILS OTHER MATERIAL TRACE OF ORGANIC MATTER 2 - 3% 3 - 5% TRACE 1 - 10% LITTLE ORGANIC MATTER 3 - 5% 5 - 12% LITTLE 10 - 20% MODERATELY ORGANIC 5 - 10% 12 - 20% SOME 20 - 35% HIGHLY ORGANIC >10% >20% HIGHLY 35% AND ABOVE										WATER LEVEL IN BORE HOLE IMMEDIATELY AFTER DRILLING. STATIC WATER LEVEL AFTER 24 HOURS. PERCHED WATER, SATURATED ZONE OR WATER BEARING STRATA SPRING OR SEEPAGE										ROADWAY EMBANKMENT WITH SOIL DESCRIPTION SOIL SYMBOL ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS INFERRED SOIL BOUNDARIES INFERRED ROCK LINE ALLUVIAL SOIL BOUNDARY DIP/DIP DIRECTION OF ROCK STRUCTURES SPT TEST BORING AUGER BORING CORE BORING MONITORING WELL PIEZOMETER INSTALLATION SLOPE INDICATOR INSTALLATION SPT N-VALUE SPT REFUSAL										AR - AUGER REFUSAL BT - BORING TERMINATED CL - CLAY CPT - CONE PENETRATION TEST CSE - COARSE DMT - DILATOMETER TEST DPT - DYNAMIC PENETRATION TEST e - VOID RATIO F - FINE FOSS - FOSSILIFEROUS FRAC. - FRACTURED FRAGS. - FRAGMENTS MED. - MEDIUM PMT - PRESSUREMETER TEST SD. - SAND, SANDY SL. - SILT, SILTY SLI. - SLIGHTLY TCR - TRICONE REFUSAL U - UNIT WEIGHT Ud - DRY UNIT WEIGHT W - MOISTURE CONTENT V - VERY VST - VANE SHEAR TEST									
CONSISTENCY OR DENSENESS										TEXTURE OR GRAIN SIZE										SOIL MOISTURE - CORRELATION OF TERMS										PLASTICITY										COLOR																													
PRIMARY SOIL TYPE COMPACTNESS OR CONSISTENCY RANGE OF STANDARD PENETRATION RESISTANCE (N-VALUE) RANGE OF UNCONFINED COMPRESSIVE STRENGTH (TONS/FT²)										U.S. STD. SIEVE SIZE OPENING (MM) 4 10 40 60 200 270 4.75 2.0 0.42 0.25 0.075 0.053										SOIL MOISTURE SCALE (ATTERBERG LIMITS) FIELD MOISTURE DESCRIPTION GUIDE FOR FIELD MOISTURE DESCRIPTION										NONPLASTIC 0-5 VERY LOW LOW PLASTICITY 6-15 SLIGHT MED. PLASTICITY 16-25 MEDIUM HIGH PLASTICITY 26 OR MORE HIGH										DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.																													
EQUIPMENT USED ON SUBJECT PROJECT										FRACTURE SPACING										BEDDING										INDURATION																																							
DRILL UNITS: <input type="checkbox"/> MOBILE B- <input type="checkbox"/> BK-51 <input type="checkbox"/> CME-45 <input type="checkbox"/> CME-550 <input type="checkbox"/> PORTABLE HOIST <input type="checkbox"/> OTHER _____ <input type="checkbox"/> OTHER _____										ADVANCING TOOLS: <input type="checkbox"/> CLAY BITS <input type="checkbox"/> 6" CONTINUOUS FLIGHT AUGER <input type="checkbox"/> 8" HOLLOW AUGERS <input type="checkbox"/> HARD FACED FINGER BITS <input type="checkbox"/> TUNG.-CARBIDE INSERTS <input type="checkbox"/> CASING <input type="checkbox"/> W/ ADVANCER <input type="checkbox"/> TRICONE _____ * STEEL TEETH <input type="checkbox"/> TRICONE _____ * TUNG.-CARB. <input type="checkbox"/> CORE BIT <input type="checkbox"/> OTHER _____										HAMMER TYPE: <input type="checkbox"/> AUTOMATIC <input type="checkbox"/> MANUAL CORE SIZE: <input type="checkbox"/> -B _____ <input type="checkbox"/> -N _____ <input type="checkbox"/> -H _____ HAND TOOLS: <input type="checkbox"/> POST HOLE DIGGER <input checked="" type="checkbox"/> HAND AUGER <input type="checkbox"/> SOUNDING ROD <input checked="" type="checkbox"/> VANE SHEAR TEST <input checked="" type="checkbox"/> OTHER_DCP _____										TERM SPACING TERM THICKNESS VERY WIDE MORE THAN 10 FEET VERY THICKLY BEDDED > 4 FEET WIDE 3 TO 10 FEET THICKLY BEDDED 1.5 - 4 FEET MODERATELY CLOSE 1 TO 3 FEET THINLY BEDDED 0.16 - 1.5 FEET CLOSE 0.16 TO 1 FEET VERY THINLY BEDDED 0.03 - 0.16 FEET VERY CLOSE LESS THAN 0.16 FEET THICKLY LAMINATED 0.008 - 0.03 FEET THINLY LAMINATED < 0.008 FEET										FOR SEDIMENTARY ROCKS, INDURATION IS THE HARDENING OF THE MATERIAL BY CEMENTING, HEAT, PRESSURE, ETC. FRIABLE RUBBING WITH FINGER FREES NUMEROUS GRAINS; GENTLE BLOW BY HAMMER DISINTEGRATES SAMPLE. MODERATELY INDURATED GRAINS CAN BE SEPARATED FROM SAMPLE WITH STEEL PROBE; BREAKS EASILY WHEN HIT WITH HAMMER. INDURATED GRAINS ARE DIFFICULT TO SEPARATE WITH STEEL PROBE; DIFFICULT TO BREAK WITH HAMMER. EXTREMELY INDURATED SHARP HAMMER BLOWS REQUIRED TO BREAK SAMPLE; SAMPLE BREAKS ACROSS GRAINS.																													
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FRAC. - FRACTURED FRAGS. - FRAGMENTS MED. - MEDIUM										FRAC. - FRACTURED FRAGS. - FRAGMENTS MED. - MEDIUM																																																											

See Sheet 1-A For Index of Sheets

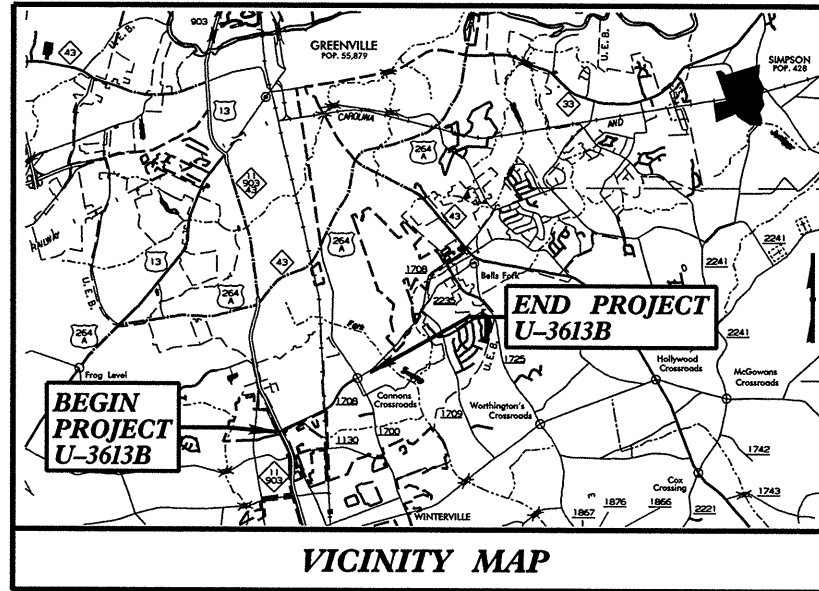
STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

LOCATION: GREENVILLE - SR 1708 (FIRE TOWER ROAD) FROM WEST OF NC 11-903 TO SR 1700 (OLD TAR ROAD/EVANS ROAD).

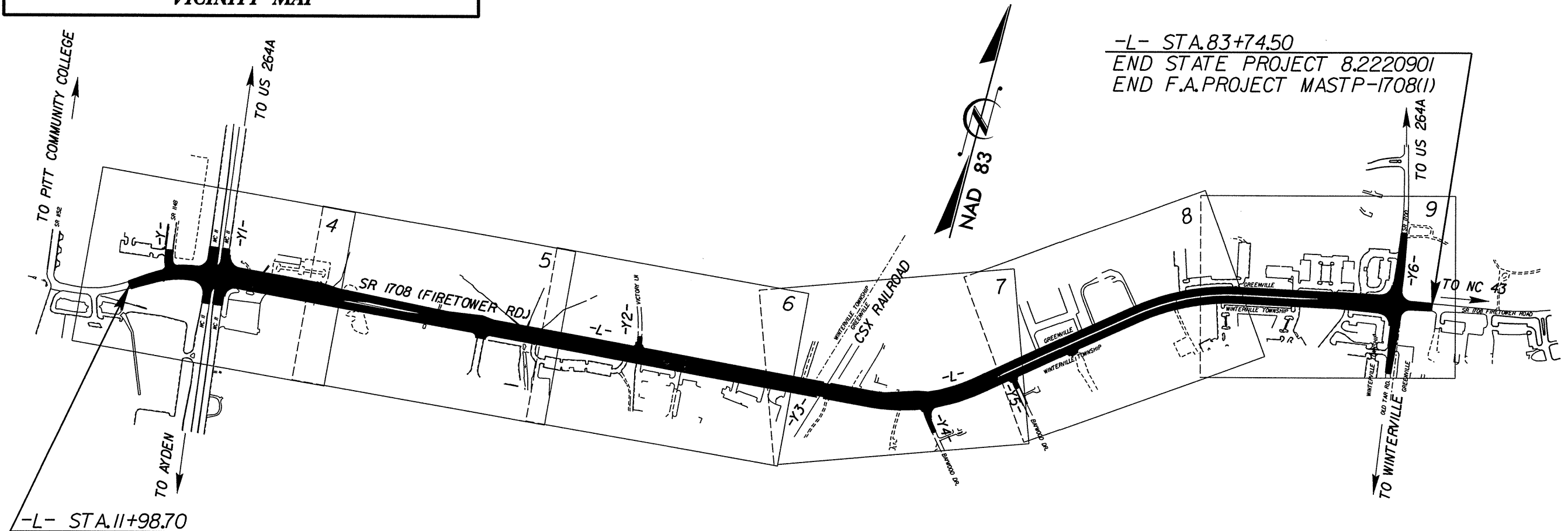
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613B	2A	12
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.2220901	MASTP-1708(1)	PE	



PROJECT: U-3613B

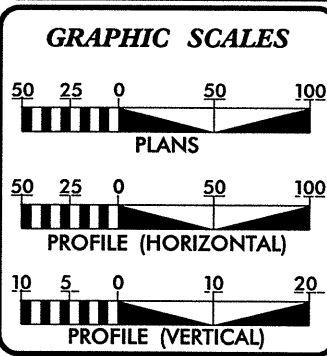
PROJECT: 8.2220901



-L- STA.83+74.50
END STATE PROJECT 8.2220901
END F.A.PROJECT MASTP-1708(1)

-L- STA.11+98.70
BEGIN STATE PROJECT 8.2220901
BEGIN F.A.PROJECT MASTP-1708(1)

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION



DESIGN DATA

ADT 2000 =	17,400
ADT 2020 =	27,000
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* TTST	1 %
DUAL	2 %

PROJECT LENGTH

LENGTH OF ROADWAY F.A. PROJECT MASTP-1708(1) =	1.359 mi.
TOTAL LENGTH STATE PROJECT 8.2220901 =	1.359 mi.

CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD

Prepared In the Office of:

DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

1995 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE: NOVEMBER 16, 2001	J. A. SPEER, PE PROJECT ENGINEER
LETTING DATE: JUNE 17, 2003	S. M. CASEY PROJECT DESIGN ENGINEER

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED

DIVISION ADMINISTRATOR

DATE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1501

LYNDO TIPPETT
SECRETARY

September 5, 2001

STATE PROJECT: 8.2220901 (U-3613B)
FEDERAL PROJECT: MASTP-1708 (1)
COUNTY: Pitt
DESCRIPTION: Greenville – SR 1708 (Fire Tower Rd.) from west of
NC 11/ 903 to SR 1700 (Old Tar Rd./Evans Rd.)
SUBJECT: Geotechnical Report – Inventory

Project Description

The project is located in central Pitt County near Winterville. The proposed construction consists of upgrading the existing three-lane roadway to a four to five-lane facility with curb and gutter. The length of the project is 1.359 miles.

A geotechnical investigation was conducted in May 2001 utilizing hand augers and dynamic cone penetrometers. Soil samples were obtained for visual classification in the field and for laboratory analysis by the Materials and Tests Unit.

Subsurface information is provided for the following survey line:

<u>Line</u>	<u>Station</u>
-L-	11+98 to 83+74.5

Areas of Special Geotechnical Interest

- 1) Ground water: No ground water was encountered within 6 ft. of proposed subgrade during this investigation.
- 2) Hard Rock: Hard rock was not encountered during this subsurface investigation.

Physiography and Geology

The project is located south of Greenville within the Coastal Plain Physiographic Province. The project has topography consistent with the Coastal Plain with flat terrain and very broad stream valleys. The project is drained by Fork Swamp and its tributaries which flow into The Tar River. Geologically, the project is underlain by sedimentary rocks and soils of the Yorktown Formation.

Soil Properties

Soils present on this project are primarily of Coastal Plain origin. These soils are derived from the weathering of underlying sedimentary strata. The soils consist of silty sands (A-2-4) sandy silts (A-4) and sandy, silty clays (A-6, A-7). The Coastal Plain clays have low to moderate plasticity indices (11 to 24).

Ground water

Ground water was encountered intermittently in borings throughout the project. Generally, the water table is fairly shallow especially in the relatively low-lying areas. Ground water was not encountered within 6 feet of subgrade elevation.

Respectfully submitted,

N. T. Roberson
Project Geologist

LTP/NTR/kw
File: U-3613B inv. doc

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA **SUMMARY OF EARTHWORK** IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				WASTE (CUBIC YARDS)			
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 8														
-L- 17+25.00	-L- 49+82.00	5210		5093	521	4689	13227		13227	16534	11845		5614	5614
-Y1A- 10+34.00	-Y1A- 11+00.00	12			1	11	28		28	35	24		1	1
-Y2- 10+34.03	-Y2- 11+67.37	73			7	66	96		96	120	54		7	7
TOTAL SUMMARY NO. 8		5295		5093	529	4766	13351		13351	16689	11923		5622	5622
SUMMARY NO. 9														
-L- 49+92.00	-L- 81+85.97	701		2493	70	631	6347		6347	7934	7303		2563	2563
-Y6- 14+08.98	-Y6- 17+66.61	278			28	250	406		406	508	258		28	28
TOTAL SUMMARY NO. 9		979		2493	98	881	6753		6753	8442	7561		2591	2591
SUMMARY NO. 10														
-L- 81+85.97	-L- 111+00.00	7511		2555	1502	6009	4878		4878	6098	89		4057	4057
-Y9- 10+34.01	-Y9- 11+00.00	14			3	11	3		3	4		7	3	10
TOTAL SUMMARY NO. 10		7525		2555	1505	6020	4881		4881	6102	89	7	4060	4067
SUMMARY NO. 11														
-L- 111+00.00	-L- 141+00.00	3432		1818	686	2746	4274		4274	5343	2597		2504	2504
TOTAL SUMMARY NO. 11		3432		1818	686	2746	4274		4274	5343	2597		2504	2504
SUMMARY NO. 12														
-L- 141+00.00	-L- 151+70.00	218			44	174	440		440	550	376		44	44
TOTAL SUMMARY NO. 12		218			44	174	440		440	550	376		44	44
PHASE III														
CONSTRUCT -L- RIGHT														
SUMMARY NO. 13														
-L- 12+00.00	-L- 16+20.70	186			19	167	256		256	320	153		19	19
-Y1- 17+00.00	-Y1- 18+48.72	18			2	16	12		12	15		1	2	3
TOTAL SUMMARY NO. 13		204			21	183	268		268	335	153	1	21	22
SUMMARY NO. 14														
-L- 17+25.00	-L- 49+82.00	843			84	759	4259		4259	5324	4565		84	84
TOTAL SUMMARY NO. 14		843			84	759	4259		4259	5324	4565		84	84
SUMMARY NO. 15														
-L- 49+92.00	-L- 81+85.97	770			77	693	3841		3841	4801	4108		77	77
-Y4- 11+00.00	-Y4- 12+24.90						287		287	359	359			
-Y5- 11+00.00	-Y5- 11+66.53						70		70	88	88			
-Y6- 9+40.00	-Y6- 13+40.92	405			40	365	144		144	180		185	40	225
TOTAL SUMMARY NO. 15		1175			117	1058	4342		4342	5428	4555	185	117	302

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

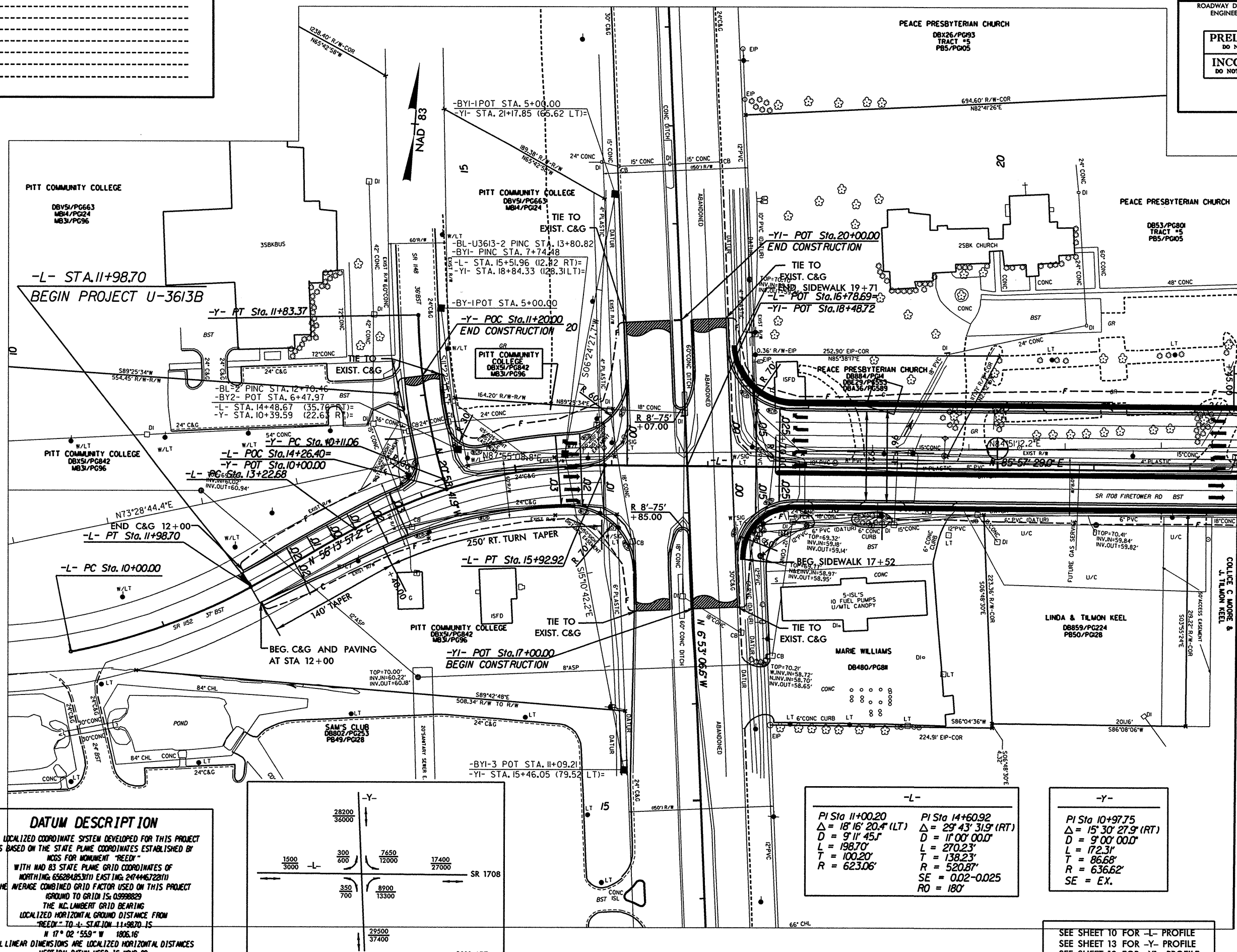
6/4/99

13-MAR-2006 14:03
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7/2/99

REVISIONS

PROJECT REFERENCE NO.	SHEET NO.
U-3613B	4
R/W SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	



MATCHLINE -L- STA 22 + 50.00 (SEE SHEET 5)

DATUM DESCRIPTION

THE LOCALIZED COORDINATE SYSTEM DEVELOPED FOR THIS PROJECT IS BASED ON THE STATE PLANE COORDINATES ESTABLISHED BY NCDS FOR MONUMENT "REEDY" WITH NAD 83 STATE PLANE GRID COORDINATES OF NORTHING: 656284853111 EASTING: 247446722111 THE AVERAGE COMBINED GRID FACTOR USED ON THIS PROJECT (GROUND TO GRID) IS: 0.9998829 THE N.C. LAMBERT GRID BEARING LOCALIZED HORIZONTAL GROUND DISTANCE FROM "REEDY" TO -L- STATION 11+98.70 IS N 17° 02' 55.9" W 1806.16' ALL LINEAR DIMENSIONS ARE LOCALIZED HORIZONTAL DISTANCES VERTICAL DATUM USED IS NGVD 29

28200	36000
1500	300
3000	600
7650	12000
17400	27000
350	8900
700	13300
29500	37400
NC 11-903	2000 ADT
	2020 ADT

-L-	
PI Sta 11+00.20	PI Sta 14+60.92
$\Delta = 18' 16" 20.4" (LT)$	$\Delta = 29' 43" 31.9" (RT)$
$D = 9' 11" 45.1"$	$D = 11' 00" 00.0"$
$L = 198.70'$	$L = 270.23'$
$T = 100.20'$	$T = 138.23'$
$R = 623.06'$	$R = 520.87'$
	$SE = 0.02-0.025$
	$RO = 180'$

-Y-	
PI Sta 10+97.75	PI Sta 14+60.92
$\Delta = 15' 30" 27.9" (RT)$	$\Delta = 29' 43" 31.9" (RT)$
$D = 9' 00" 00.0"$	$D = 11' 00" 00.0"$
$L = 172.31'$	$L = 270.23'$
$T = 86.68'$	$T = 138.23'$
$R = 636.62'$	$R = 520.87'$
$SE = EX.$	$SE = EX.$

SEE SHEET 10 FOR -L- PROFILE
SEE SHEET 13 FOR -Y- PROFILE
SEE SHEET 13 FOR -YI- PROFILE

*****SYTIME*****
*****CDN*****
*****USER*****

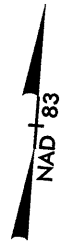
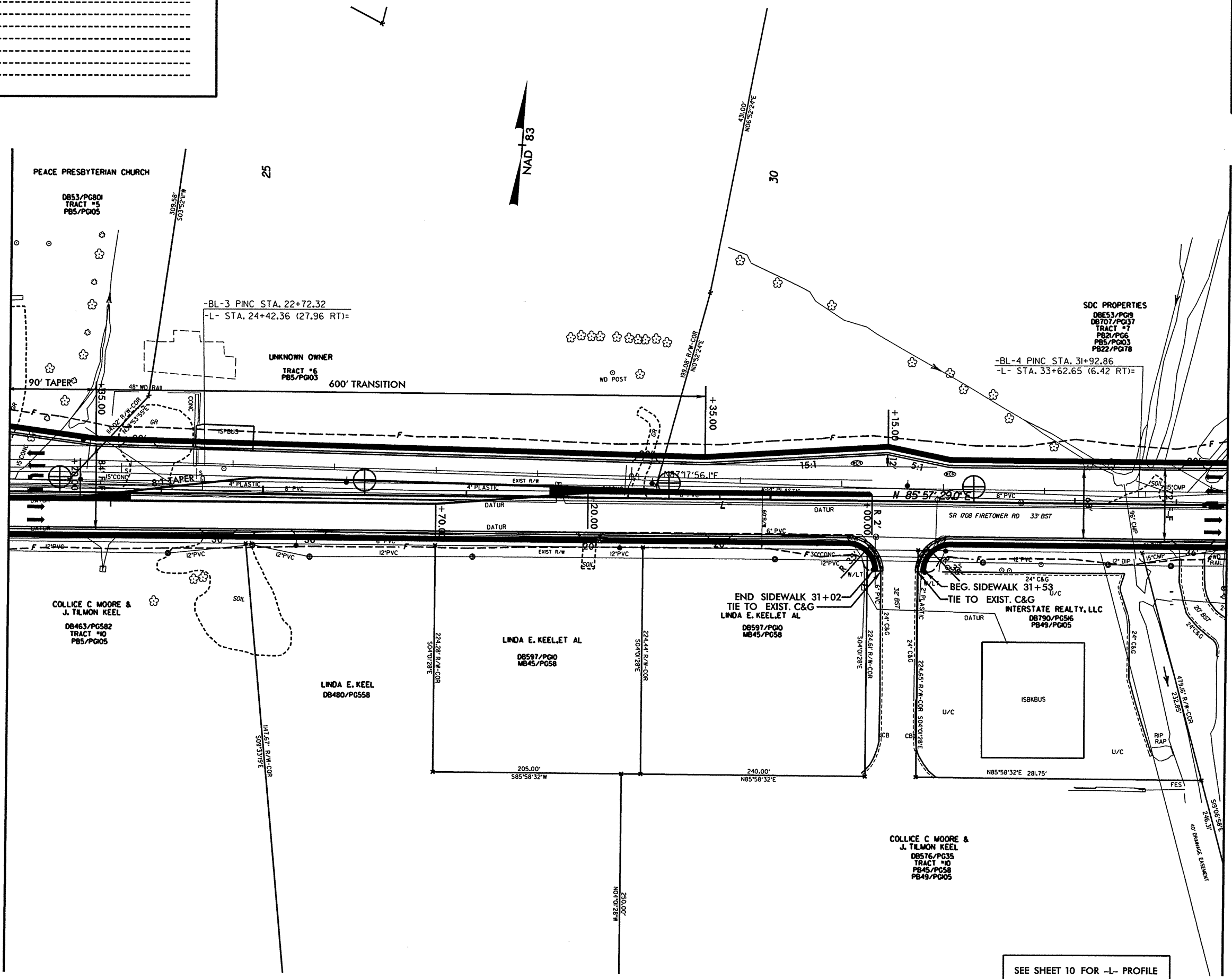
7/2/99

REVISIONS

PROJECT REFERENCE NO. U-3613B	SHEET NO. 5
RAW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR A/W ACQUISITION	

MATCHLINE -L- STA 22 + 50.00 (SEE SHEET 4)

MATCHLINE -L- STA 34 + 50.00 (SEE SHEET 6)



SEE SHEET 10 FOR -L- PROFILE

\$\$\$\$\$SYTIME\$\$\$\$\$
 \$\$\$DDONS\$\$\$\$\$
 \$\$\$USERNAME\$\$\$\$\$

7/22/99

REVISIONS

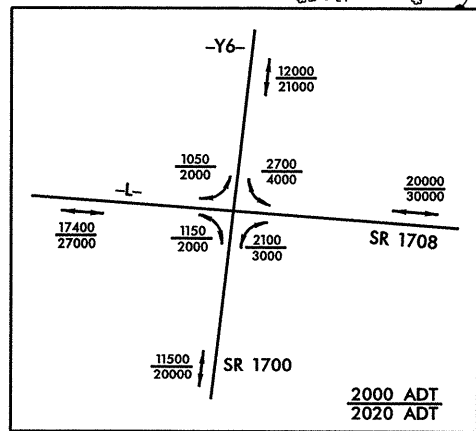
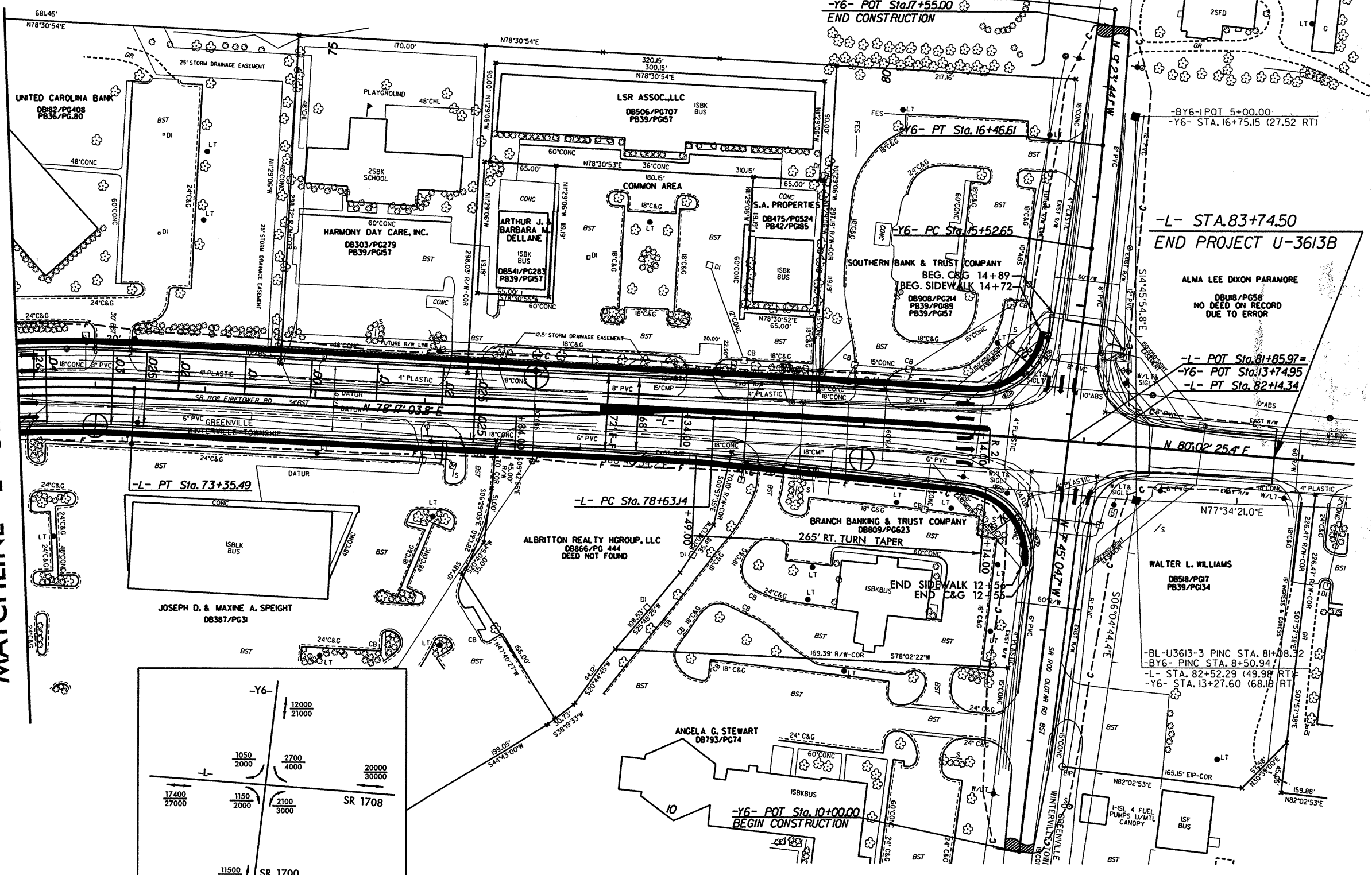
PROJECT REFERENCE NO.	SHEET NO.
U-3613B	9
RW SHEET NO.	
ROADWAY DESIGN ENGINEER	HYDRAULICS ENGINEER
PRELIMINARY PLANS DO NOT USE FOR CONSTRUCTION	
INCOMPLETE PLANS DO NOT USE FOR R/W ACQUISITION	

-Y6-
 PI Sta 15+99.64
 $\Delta = 1'38'39.4''$ (LT)
 $D = 1'45'00.0''$
 $L = 93.96'$
 $T = 46.98'$
 $R = 3,274.04'$
 SE = EX

-L-
 PI Sta 80+38.76
 $\Delta = 1'45'21.6''$ (RT)
 $D = 0'30'00.0''$
 $L = 351.20'$
 $T = 175.61'$
 $R = 11,459.6'$
 SE = 0.025



MATCHLINE -L- STA. 72 + 30.00 (SEE SHEET 8)



SEE SHEET 12 FOR -L- PROFILE
 SEE SHEET 14 FOR -Y6- PROFILE

*****SYTIME*****
 *****CDG*****
 *****D*****

CONTRACT: C201449 ID: U-3613C

STATE OF NORTH CAROLINA

DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

GEOTECHNICAL UNIT

SUBSURFACE INVESTIGATION

CONTENTS:

LINE	STATION	SHEET NO.
-L-	83+74-151+70	4-12

STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613C	1	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
34961.1.2	MA-STP-1708(1)	PE	
34961.2.2	STP-1708(3)	R/W, UTIL.	
34961.3.3	STP-1708(5)	CONST.	

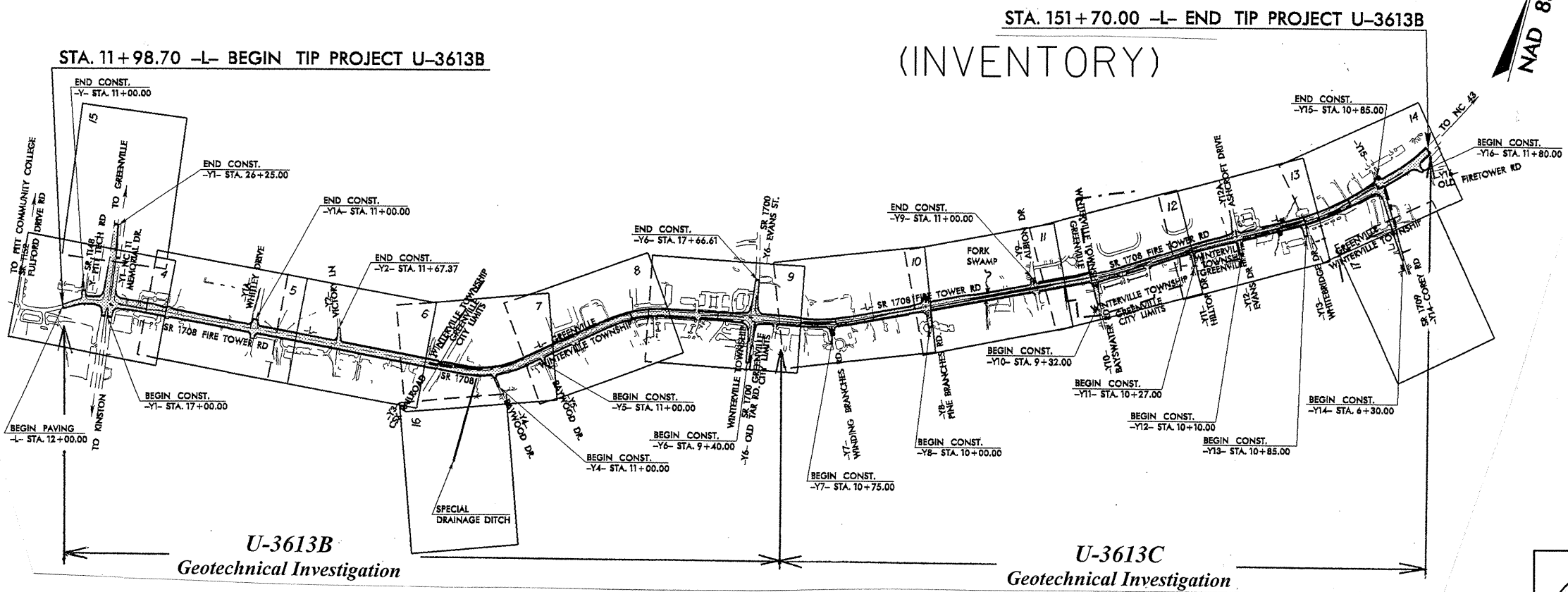
CAUTION NOTICE

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. THE VARIOUS FIELD BORING LOGS, ROCK CORES, AND SOIL TEST DATA AVAILABLE MAY BE REVIEWED OR INSPECTED IN RALEIGH BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINION OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

STATE PROJECT 34961.3.3 I.D. NO. U-3613C
 F.A. PROJECT MASTP-1708(1)
 COUNTY PITT
 DESCRIPTION SR 1708 (FIRE TOWER RD.) FROM
SR 1700 (OLD TAR RD. / EVANS RD.) TO
EAST OF SR 1709 (COREY RD.)



INVESTIGATED BY J. B. BARFIELD PERSONNEL N.T.R.
 CHECKED BY C. M. GILLIAM L.B.M.
 SUBMITTED BY L. T. PACKER G.E.J.
 DATE OCTOBER 24, 2001 J.W.B.

SEAL

SIGNATURE Mary Wainman 11/7/01

DRAWN BY: W. D. FIELDS

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

SUBSURFACE INVESTIGATION

SOIL AND ROCK LEGEND, TERMS, SYMBOLS, AND ABBREVIATIONS

ID	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
U-3613C	8.2220901	2	14

SOIL DESCRIPTION				GRADATION				TERMS AND DEFINITIONS				ABBREVIATIONS											
SOIL IS CONSIDERED TO BE THE UNCONSOLIDATED, SEMI-CONSOLIDATED OR WEATHERED EARTH MATERIALS WHICH CAN BE PENETRATED WITH A CONTINUOUS FLIGHT POWER AUGER, AND WHICH YIELDS LESS THAN 100 BLOWS ACCORDING TO STANDARD PENETRATION TEST (ASTM D-1586). SOIL CLASSIFICATION IS BASED ON THE AASHTO SYSTEM AND BASIC DESCRIPTIONS GENERALLY SHALL INCLUDE: CONSISTENCY, COLOR, TEXTURE, MOISTURE, AASHTO CLASSIFICATION AND OTHER PERTINENT FACTORS, SUCH AS, MINERALOGICAL COMPOSITION, ANGULARITY STRUCTURE, PLASTICITY, ETC. EXAMPLE: VERY STIFF, GRAY SILTY CLAY, MOST WITH INTERBEDDED FINE SAND LAYERS, HIGHLY PLASTIC, A-7-6.				WELL GRADED - INDICATES A GOOD REPRESENTATION OF PARTICLE SIZES FROM FINE TO COARSE. UNIFORM - INDICATES THAT SOIL PARTICLES ARE ALL APPROXIMATELY THE SAME SIZE. (ALSO POORLY GRADED) GAP-GRADED - INDICATES A MIXTURE OF UNIFORM PARTICLES OF TWO OR MORE SIZES.				ALLUVIUM (ALLUV.) - SOILS WHICH HAVE BEEN TRANSPORTED BY WATER. APPARENT DIP - THE DIP OF ROCK STRATA NOT PERPENDICULAR TO STRIKE. AQUIFER - A WATER BEARING FORMATION OR STRATA. AUGER REFUSAL (A.R.) - POINT AT WHICH POWER AUGERS WILL NOT PENETRATE. BEDDED - SOIL OR ROCK LYING IN A POSITION ESSENTIALLY PARALLEL. BEDROCK - ROCK OF RELATIVELY GREAT THICKNESS AND EXTENT IN ITS ORIGINAL LOCATION. CALCAREOUS (CALC.) - SOILS WHICH CONTAIN APPRECIABLE AMOUNTS OF CALCIUM CARBONATE. COHESIVE SOIL - A SOIL THAT WHEN UNCONFINED HAS CONSIDERABLE DRY STRENGTH AND SIGNIFICANT COHESION WHEN SUBMERGED. COLLUVIUM - ROCK FRAGMENTS MIXED WITH SOIL DEPOSITED BY GRAVITY ON SLOPE OR AT BOTTOM OF SLOPE. CORE RECOVERY (% REC.) - TOTAL LENGTH OF ALL ROCK DIVIDED BY TOTAL LENGTH OF CORE RUN AND EXPRESSED AS A PERCENTAGE. COQUINA - A ROCK TYPE COMPOSED ESSENTIALLY OF MARINE SHELLS CEMENTED BY CALCIUM CARBONATE. DIKE - IGNEOUS ROCK INTRUSION WHICH IS NARROW COMPARED WITH ITS OTHER DIMENSIONS. DIP - THE ANGLE BETWEEN A BEDDING PLANE, JOINT PLANE OR FAULT PLANE AND THE HORIZONTAL, MEASURED PERPENDICULAR TO THE STRIKE. DUMPS - UNCOVERED DEPOSITS OF WASTE MATERIAL SUCH AS WOOD, MASONRY DEBRIS OR GARBAGE. FAULT - A BREAK IN THE CONTINUITY OF A BODY OF ROCK, ATTENDED BY A MOVEMENT ON EITHER OR BOTH SIDES OF THE BREAK. FINES - PORTIONS OF A SOIL FINER THAN NO. 200 U.S. STANDARD SIEVE. FISSILITY OR FISSILE - A PROPERTY OF SPLITTING EASILY ALONG CLOSELY SPACED PARALLEL PLANES. FLOAT - ROCK FRAGMENTS ON SURFACE NEAR THEIR ORIGINAL POSITION AND DISLOGGED FROM PARENT MATERIAL. FLOODPLAIN - LAND BORDERING A STREAM, BUILT OF SEDIMENTS DEPOSITED BY THE STREAM. FORMATION - A MAPPABLE UNIT THAT CAN BE RECOGNIZED AND TRACED IN THE FIELD. FRACTURE - A CRACK LARGE ENOUGH TO BE VISIBLE TO THE UNAIDED EYE. FRIABLE - EASY TO BREAK OR CRUMBLE. GRANULAR MATERIAL - SOIL THAT WHEN UNCONFINED HAS LITTLE OR NO DRY STRENGTH AND HAS LITTLE OR NO COHESION WHEN SUBMERGED. GROUNDWATER (G.W.) - WATER THAT IS FREE TO MOVE THROUGH SOIL MASS UNDER THE INFLUENCE OF GRAVITY. GROUNDWATER LEVEL - LEVEL OF WATER WITH RESPECT TO EXISTING GROUND SURFACE. HARDPAN - A GENERAL TERM USED TO DESCRIBE A HARD CEMENTED SOIL LAYER WHICH DOES NOT SOFTEN WHEN WET. INDURATED - EARTH MATERIAL HARDENED BY HEAT, PRESSURE OR CEMENTATION. INTERBEDDED - ALTERNATING LENSES OR LAYERS OF SOIL AND/OR ROCK MATERIALS. JOINT - FRACTURE IN ROCK ALONG WHICH NO APPRECIABLE MOVEMENT HAS OCCURRED. LAMINATED - VERY THIN ALTERNATING LAYERS LESS THAN INCH. LAYER - SUBJECT MATERIAL GREATER THAN INCH IN THICKNESS. LEDGE - A SHELF-LIKE RIDGE OR PROJECTION OF ROCK WHOSE THICKNESS IS SMALL COMPARED TO ITS LATERAL EXTENT. LENS - A BODY OF SOIL OR ROCK THAT THINS OUT IN ONE OR MORE DIRECTIONS. MARL - A NON-INDURATED, CALCAREOUS DEPOSIT OF CLAYS, SILTS AND SANDS, OFTEN CONTAINING SHELLS. MICACEOUS SOIL (MIC.) - A SOIL OR ROCK TYPE CONTAINING AN APPRECIABLE AMOUNT OF MICA. MUCK (MK.) - A HIGHLY ORGANIC SOIL OF VERY SOFT CONSISTENCY, GENERALLY FOUND ON TIDAL FLATS, LAKE OR STREAM FLOODPLAINS. PEAT (PT) - A FIBROUS MASS OF ORGANIC MATTER IN VARIOUS STAGES OF DECOMPOSITION. PERCHED WATER - WATER MAINTAINED ABOVE THE NORMAL GROUND WATER LEVEL BY THE PRESENCE OF AN INTERVENING IMPERVIOUS STRATUM. RESIDUAL SOIL - SOIL FORMED IN PLACE BY THE WEATHERING OF ROCK. ROCK - SEE LEGEND. ROCK QUALITY DESIGNATION (R.Q.D.) - A MEASURE OF ROCK QUALITY DESCRIBED BY: TOTAL LENGTH OF ROCK SEGMENTS EQUAL TO OR GREATER THAN 4 INCHES DIVIDED BY THE TOTAL LENGTH OF CORE RUN EXPRESSED AS A PERCENTAGE. SANITARY LANDFILLS - COMPACTED AND/OR COVERED LAYERS OF SOIL AND WASTE PRODUCTS. SAPROLITE (SAP.) - RESIDUAL SOIL WHICH RETAINS THE RELIC STRUCTURE OR FABRIC OF THE PARENT ROCK. SLICKENSIDE - POLISHED AND STRIATED SURFACE THAT RESULTS FROM FRICTION ALONG A FAULT OR SLIP PLAIN. SILL - AN IGNEOUS SHEET OF INTRUSIVE ROCK WHOSE THICKNESS IS SLIGHT COMPARED TO ITS LATERAL EXTENT. SOME - PRESENCE OF 5% TO 30% OF SUBJECT MATERIAL. STANDARD PENETRATION TEST (PENETRATION RESISTANCE) (SPT) - NUMBER OF BLOWS (IN OR B.P.F.) OF A 140 LB. HAMMER FALLING 30 INCHES REQUIRED TO PRODUCE A PENETRATION OF 1 FOOT INTO SOIL WITH A 2 INCH OUTSIDE DIAMETER SPLIT SPOON SAMPLER. SPT REFUSAL PENETRATION RESISTANCE OF LESS THAN INCH WITH 50 BLOWS. STRIKE - THE DIRECTION OR BEARING OF A HORIZONTAL LINE IN THE PLANE OF AN INCLINED STRATUM, JOINT, FAULT OR OTHER STRUCTURAL PLANE. SUBGRADE - THE SOIL PREPARED TO SUPPORT A STRUCTURE OR A PAVEMENT SYSTEM. TOPSOIL (T.S.) - SURFACE SOILS USUALLY CONTAINING ORGANIC MATTER. TRACE - PRESENCE OF LESS THAN 5% OF SUBJECT MATERIAL.				THE ANGULARITY OR ROUNDNESS OF SOIL GRAINS ARE DESIGNATED BY THE TERMS: ANGULAR, SUBANGULAR, SUBROUNDED, OR ROUNDED.				BLDR. - BOULDER CL. - CLAY COB. - COBBLE CSE. - COARSE EST. - ESTIMATED F. - FINE FOSS. - FOSSILIFEROUS FRAC. - FRACTURED GR. - GRAVEL LL - LIQUID LIMIT MED. - MEDIUM MOT. - MOTTLED OM - OPTIMUM MOISTURE ORG. - ORGANIC				PL - PLASTIC LIMIT PI - PLASTICITY INDEX n - POROSITY SD. - SAND SAT. - SATURATED SL. - SILT, SILTY SLI. - SLIGHTLY G _s - SPECIFIC GRAVITY qu - UNCONFINED COMPRESSIVE STRENGTH γ - UNIT WEIGHT (WET UNIT WEIGHT) γ _d - DRY UNIT WEIGHT γ _{sat} - SATURATED UNIT WEIGHT e - VOID RATIO V. - VERY			
SOIL LEGEND AND AASHTO CLASSIFICATION				MINERALOGICAL COMPOSITION				COMPRESSION				ROCK DESCRIPTION											
GENERAL CLASS. GRANULAR MATERIALS (≤ 35% PASSING #200) SILT-CLAY MATERIALS (> 35% PASSING #200) ORGANIC MATERIALS				MINERAL NAMES SUCH AS QUARTZ, FELDSPAR, MICA, TALC, KAOLIN, ETC. ARE USED IN DESCRIPTIONS WHENEVER THEY ARE CONSIDERED OF SIGNIFICANCE.				SLIGHTLY COMPRESSIBLE LIQUID LIMIT LESS THAN 30 MODERATELY COMPRESSIBLE LIQUID LIMIT 31-50 HIGHLY COMPRESSIBLE LIQUID LIMIT GREATER THAN 50				IN THE BROADEST MEANING, HARD ROCK IS CONSIDERED THAT MATERIAL WHICH CANNOT BE SAMPLED BY CONVENTIONAL SOIL SAMPLING TOOLS OR TECHNIQUES. THE BOUNDARY BETWEEN SOIL AND ROCK IS ARBITRARY. TRANSITION BETWEEN SOIL AND ROCK IS OFTEN REPRESENTED BY A ZONE OF 'WEATHERED ROCK'. FOR THE PURPOSE OF THIS INVESTIGATION, THESE MATERIALS ARE DIVIDED AS FOLLOWS:											
GROUP CLASS. A-1 A-2 A-3 A-4 A-5 A-6 A-7 A-7.5 A-7.6 A-8				A-1, A-2 A-4, A-5 A-6, A-7				WEATHERED ROCK (SWR) (HWR)				SOFT WEATHERED ROCK											
SYMBOL				SYMBOL				HARD WEATHERED ROCK				MATERIAL THAT CAN BE PENETRATED WITH SOME DIFFICULTY USING POWER AUGERS AND YIELDS SPT VALUES > 100 BLOWS BUT < SPT REFUSAL.											
% PASSING				SYMBOL				CORDED ROCK				INFERRED ROCK LINE											
LIQUID LIMIT PLASTIC INDEX				SYMBOL				HARD ROCK (HR)				MATERIAL THAT CANNOT BE PENETRATED BY POWER AUGERS, EXCEPT IN THIN LEDGES, AND REQUIRES ROCK CORING TOOLS FOR OBTAINING A SAMPLE.											
GROUP INDEX				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SPT TEST BORING											
USUAL TYPES OF MAJOR MATERIALS				SYMBOL				ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				AUGER BORING											
GEN. RATING AS A SUBGRADE				SYMBOL				INFERRER SOIL BOUNDARIES				CORE BORING											
P.I. OF A-7-5 ≤ L.L. - 30 + P.I. OF A-7-5 > L.L. - 30				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				MONITORING WELL											
CONSISTENCY OR DENSENESS				SYMBOL				25° DIP DIRECTION AND DIP OF STRUCTURES				PIEZOMETER INSTALLATION											
PRIMARY SOIL TYPE				SYMBOL				APPARENT DIP (NORMAL TO _____)				SLOPE INDICATOR INSTALLATION											
GENERALY GRANULAR MATERIAL				SYMBOL				MISCELLANEOUS SYMBOLS AND ABBREVIATIONS				SOUNDING ROD											
GENERALY SILT-CLAY MATERIAL				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SPT N-COUNT											
TEXTURE OR GRAIN SIZE				SYMBOL				ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				SAMPLE DESIGNATIONS											
U.S. STD. SIEVE SIZE OPENING (MM)				SYMBOL				INFERRER SOIL BOUNDARIES				S- BULK SAMPLE											
BOULDER COBBLE GRAVEL COARSE SAND FINE SAND SILT CLAY				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				SS- SPLIT SPOON SAMPLE											
GRAIN SIZE				SYMBOL				25° DIP DIRECTION AND DIP OF STRUCTURES				ST- SHELBY TUBE SAMPLE											
SOIL MOISTURE - CORRELATION OF TERMS				SYMBOL				APPARENT DIP (NORMAL TO _____)				RS- ROCK SAMPLE											
SOIL MOISTURE SCALE (ATTERBERG LIMITS)				SYMBOL				MISCELLANEOUS SYMBOLS AND ABBREVIATIONS				PIEZOMETER INSTALLATION											
FIELD MOISTURE DESCRIPTION				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SLOPE INDICATOR INSTALLATION											
GUIDE FOR FIELD MOISTURE DESCRIPTION				SYMBOL				ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				SOUNDING ROD											
LIQUID LIMIT (SAT.)				SYMBOL				INFERRER SOIL BOUNDARIES				SPT N-COUNT											
WET - (W)				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				SAMPLE DESIGNATIONS											
SEMISOLID; REQUIRES DRYING TO ATTAIN OPTIMUM MOISTURE				SYMBOL				25° DIP DIRECTION AND DIP OF STRUCTURES				S- BULK SAMPLE											
MOIST - (M)				SYMBOL				APPARENT DIP (NORMAL TO _____)				SS- SPLIT SPOON SAMPLE											
SOLID; AT OR NEAR OPTIMUM MOISTURE				SYMBOL				MISCELLANEOUS SYMBOLS AND ABBREVIATIONS				ST- SHELBY TUBE SAMPLE											
DRY - (D)				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				RS- ROCK SAMPLE											
REQUIRES ADDITIONAL WATER TO ATTAIN OPTIMUM MOISTURE				SYMBOL				ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				PIEZOMETER INSTALLATION											
PLASTICITY				SYMBOL				INFERRER SOIL BOUNDARIES				SLOPE INDICATOR INSTALLATION											
PLASTICITY INDEX DRY STRENGTH				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				SOUNDING ROD											
NONPLASTIC LOW PLASTICITY MED. PLASTICITY HIGH PLASTICITY				SYMBOL				25° DIP DIRECTION AND DIP OF STRUCTURES				SPT N-COUNT											
COLOR				SYMBOL				APPARENT DIP (NORMAL TO _____)				SAMPLE DESIGNATIONS											
DESCRIPTIONS MAY INCLUDE COLOR OR COLOR COMBINATIONS (TAN, RED, YEL.-BRN, BLUE-GRAY) MODIFIERS SUCH AS LIGHT, DARK, MOTTLED, STREAKED, ETC. ARE USED TO DESCRIBE APPEARANCE.				SYMBOL				MISCELLANEOUS SYMBOLS AND ABBREVIATIONS				S- BULK SAMPLE											
DRILL UNITS:				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SS- SPLIT SPOON SAMPLE											
MOBILE B BK-51 CME-45 CME-550 PORTABLE HOIST OTHER OTHER				SYMBOL				INFERRER SOIL BOUNDARIES				ST- SHELBY TUBE SAMPLE											
AUGER TOOLS:				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				RS- ROCK SAMPLE											
6 INCH CONTINUOUS FLIGHT 8 INCH HOLLOW AUGERS HARD FACED FINGER BITS TUNG. - CARBIDE INSERTS CLAY BITS OTHER:				SYMBOL				25° DIP DIRECTION AND DIP OF STRUCTURES				SLOPE INDICATOR INSTALLATION											
HAMMER TYPE:				SYMBOL				APPARENT DIP (NORMAL TO _____)				SOUNDING ROD											
AUTOMATIC MANUAL				SYMBOL				MISCELLANEOUS SYMBOLS AND ABBREVIATIONS				SPT N-COUNT											
CORE BORING TOOLS:				SYMBOL				ROADWAY EMBANKMENT WITH SOIL DESCRIPTION				SAMPLE DESIGNATIONS											
-AX -BX -NX				SYMBOL				ARTIFICIAL FILL OTHER THAN ROADWAY EMBANKMENTS				S- BULK SAMPLE											
HAND TOOLS:				SYMBOL				INFERRER SOIL BOUNDARIES				SS- SPLIT SPOON SAMPLE											
POST HOLE DIGGER HAND AUGER SOUNDING ROD VANE SHEAR TEST				SYMBOL				ALLUVIAL/RESIDUAL BOUNDARIES				ST- SHELBY TUBE SAMPLE											

CAUTION NOTICE :

THE SUBSURFACE INFORMATION AND THE SUBSURFACE INVESTIGATION ON WHICH IT IS BASED WAS MADE FOR THE PURPOSE OF STUDY, PLANNING AND DESIGN, AND NOT FOR CONSTRUCTION OR PAY PURPOSES. SOME DATA OBTAINED MAY BE OMITTED FROM THIS RELEASE.

ADDITIONAL INFORMATION MAY BE AVAILABLE, INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

- FIELD BORING LOGS
- ROCK CORES
- SOIL & ROCK TEST DATA
- SUBSURFACE REPORT

THIS INFORMATION MAY BE VIEWED BY APPOINTMENT BY CONTACTING THE N.C. DEPARTMENT OF TRANSPORTATION, GEOTECHNICAL UNIT @ (919) 250-4088. NEITHER THE SUBSURFACE PLANS AND REPORTS, NOR THE FIELD BORING LOGS, ROCK CORES, OR SOIL TEST DATA IS PART OF THE CONTRACT.

GENERAL SOIL AND ROCK STRATA DESCRIPTIONS AND INDICATED BOUNDARIES ARE BASED ON A GEOTECHNICAL INTERPRETATION OF ALL AVAILABLE SUBSURFACE DATA AND MAY NOT NECESSARILY REFLECT THE ACTUAL SUBSURFACE CONDITIONS BETWEEN BORINGS OR BETWEEN SAMPLED STRATA WITHIN THE BOREHOLE. THE LABORATORY SAMPLE DATA AND THE IN SITU (IN-PLACE) TEST DATA CAN BE RELIED ON ONLY TO THE DEGREE OF RELIABILITY INHERENT IN THE STANDARD TEST METHOD. THE OBSERVED WATER LEVELS OR SOIL MOISTURE CONDITIONS INDICATED IN THE SUBSURFACE INVESTIGATIONS ARE AS RECORDED AT THE TIME OF THE INVESTIGATION. THESE WATER LEVELS OR SOIL MOISTURE CONDITIONS MAY VARY CONSIDERABLY WITH TIME ACCORDING TO CLIMATIC CONDITIONS INCLUDING TEMPERATURES, PRECIPITATION AND WIND, AS WELL AS OTHER NON-CLIMATIC FACTORS.

THE BIDDER OR CONTRACTOR IS CAUTIONED THAT DETAILS SHOWN ON THE SUBSURFACE PLANS ARE PRELIMINARY ONLY AND IN MANY CASES THE FINAL DESIGN DETAILS ARE DIFFERENT. FOR BIDDING AND CONSTRUCTION PURPOSES, REFER TO THE CONSTRUCTION PLANS AND DOCUMENTS FOR FINAL DESIGN INFORMATION ON THIS PROJECT. THE DEPARTMENT DOES NOT WARRANT OR GUARANTEE THE SUFFICIENCY OR ACCURACY OF THE INVESTIGATION MADE, NOR THE INTERPRETATIONS MADE OR OPINIONS OF THE DEPARTMENT AS TO THE TYPE OF MATERIALS AND CONDITIONS TO BE ENCOUNTERED. THE BIDDER OR CONTRACTOR IS CAUTIONED TO MAKE SUCH INDEPENDENT SUBSURFACE INVESTIGATIONS AS HE DEEMS NECESSARY TO SATISFY HIMSELF AS TO CONDITIONS TO BE ENCOUNTERED ON THIS PROJECT. THE CONTRACTOR SHALL HAVE NO CLAIM FOR ADDITIONAL COMPENSATION OR FOR AN EXTENSION OF TIME FOR ANY REASON RESULTING FROM THE ACTUAL CONDITIONS ENCOUNTERED AT THE SITE DIFFERING FROM THOSE INDICATED IN THE SUBSURFACE INFORMATION.

NOTE - THE INFORMATION CONTAINED HEREIN IS NOT IMPLIED OR GUARANTEED BY THE N.C. DEPARTMENT OF TRANSPORTATION AS BEING ACCURATE NOR IS IT CONSIDERED TO BE PART OF THE PLANS, SPECIFICATIONS, OR CONTRACT FOR THE PROJECT.

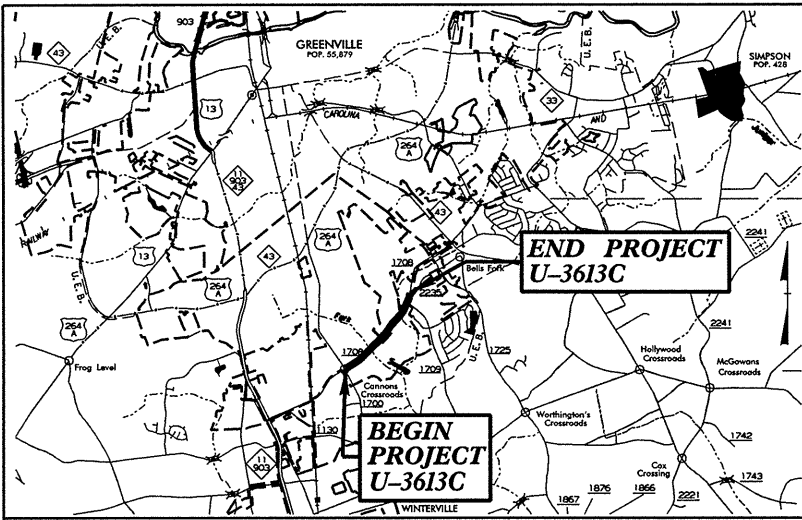
NOTE - BY HAVING REQUESTED THIS INFORMATION THE CONTRACTOR SPECIFICALLY WAIVES ANY CLAIMS FOR INCREASED COMPENSATION OR EXTENSION OF TIME BASED ON DIFFERENCES BETWEEN THE CONDITIONS INDICATED HEREIN AND THE ACTUAL CONDITIONS AT THE PROJECT SITE.

NOTES:

STATE OF NORTH CAROLINA
DIVISION OF HIGHWAYS

PITT COUNTY

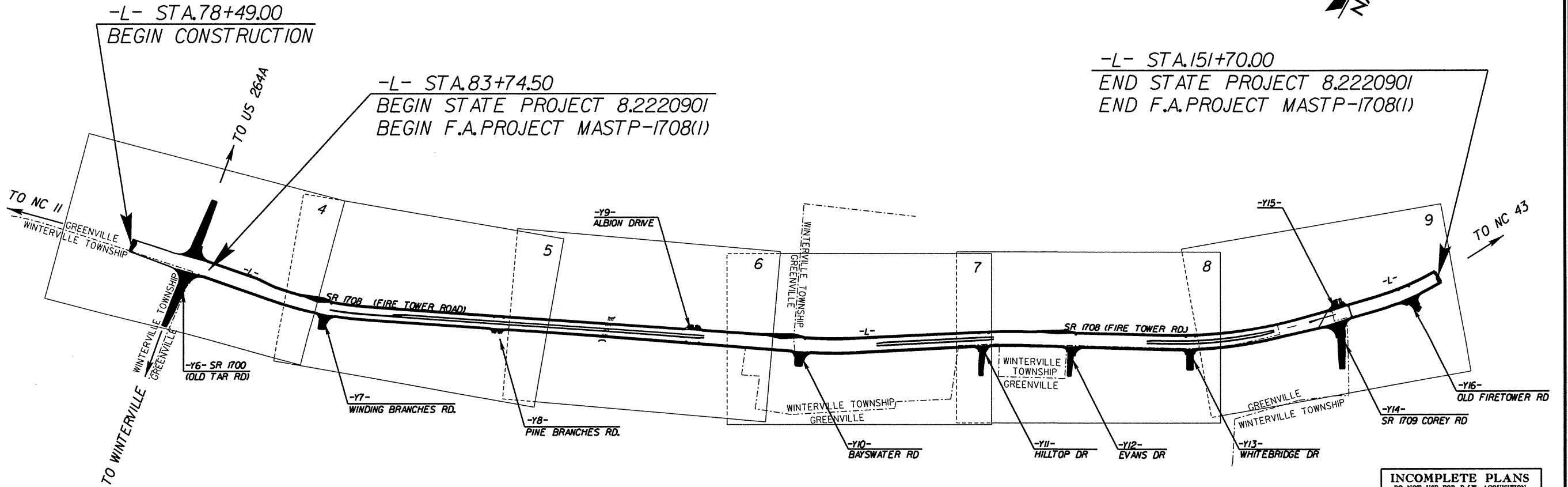
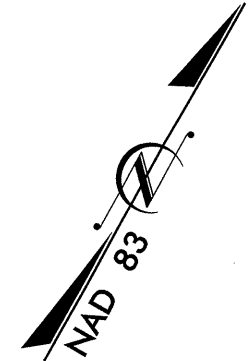
STATE	STATE PROJECT REFERENCE NO.	SHEET NO.	TOTAL SHEETS
N.C.	U-3613C	3	14
STATE PROJ. NO.	F.A. PROJ. NO.	DESCRIPTION	
8.2220901	MASTP-1708(1)	PE	



VICINITY MAP

LOCATION: GREENVILLE - SR 1708 (FIRE TOWER RD) FROM SR 1700 (OLD TAR RD /EVANS RD) TO EAST OF SR 1709 (COREY RD)

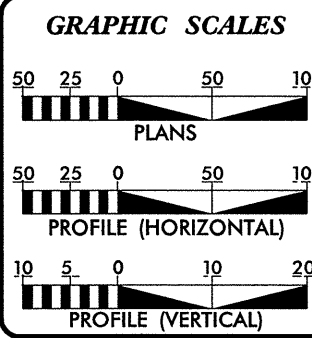
TYPE OF WORK: GRADING, DRAINAGE, PAVING, CURB & GUTTER AND GUARDRAIL



-L- STA.151+70.00
END STATE PROJECT 8.2220901
END F.A.PROJECT MASTP-1708(1)

INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION
PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION

PROJECT: 8.2220901 U-3613C



DESIGN DATA

ADT 2000 =	20,000
ADT 2020 =	30,000
DHV =	10 %
D =	60 %
T =	3 % *
V =	50 MPH
* TTST 1 %	DUAL 2 %

PROJECT LENGTH

LENGTH ROADWAY F. A. PROJECT BRSTP-1708(1) =	1.287 mi.
TOTAL LENGTH STATE PROJECT 8.2220901 =	1.287 mi.
CLEARING ON THIS PROJECT SHALL BE PERFORMED TO THE LIMITS ESTABLISHED BY METHOD	

Prepared In the Office of:
DIVISION OF HIGHWAYS
1000 Birch Ridge Dr., Raleigh, NC 27610

1995 STANDARD SPECIFICATIONS

RIGHT OF WAY DATE:
NOVEMBER 16, 2001

LETTING DATE:
JUNE 17, 2003

HYDRAULICS ENGINEER

SIGNATURE: _____ P.E.

ROADWAY DESIGN ENGINEER

SIGNATURE: _____ P.E.

DIVISION OF HIGHWAYS
STATE OF NORTH CAROLINA

STATE DESIGN ENGINEER

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED
DIVISION ADMINISTRATOR

DATE



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

MICHAEL F. EASLEY
GOVERNOR

1501 MAIL SERVICE CENTER, RALEIGH, N.C. 27699-1501

LYNDO TIPPETT
SECRETARY

October 23, 2001

STATE PROJECT: 8.2220901 (U-3613C)
FEDERAL PROJECT: MASTP-1701 (1)
COUNTY: Pitt
DESCRIPTION: Greenville – SR 1708 (Fire Tower Rd.) from SR 1700 (Old Tar Rd./Evans Rd.) to east of SR 1709 (Corey Rd.)

SUBJECT: Geotechnical Report – Inventory

Project Description

The project is located in central Pitt County near Greenville City limits and Winterville Township border. The project consists of widening the existing two-lane roadway to a five-lane facility at the beginning and the end of the project with curb and gutter. The remaining of the project will consist of widening the two-lane roadway into a four-lane divided roadway with curb and gutter and a raised earth median.

A geotechnical investigation was conducted in May 2001 utilizing hand augers and Dynamic Cone Penetrometer. Soil samples were obtained for visual classification in the field and for laboratory analysis by the Materials and Test Unit.

The following survey lines were investigated:

<u>Line</u>	<u>Station</u>
-L-	83+74 to 151+70

Areas of Special Geotechnical Interest

1) Groundwater: Groundwater was encountered within 6 feet of proposed subgrade in the following areas.

<u>Line</u>	<u>Station</u>
-L-	130+00 to 137+50

2) Hard Rock: Hard rock was not encountered during this investigation.

3) Wells: No wells were discovered within the right-of-way during this investigation.

4) Artificial Berms: There are several man-made berms along the project. These berms consist of sands and silty sands.

5) Extension of existing 60 in CMP (135+20 ±)
Soundings made in the immediate vicinity of the above site indicate approximately 2 to 4 feet of loose alluvial sands (A-2-4, A-3) underlain by soft to medium stiff clays (A-6, A-7).

Physiography and Geology

The project is located south of Greenville within the Coastal Plain Physiographic Province. The topography for the project is generally flat. Drainage for the project is typically good and is provided by Fork swamp and its tributaries, which flow into the Tar River. Geologically the project is underlain by soil and sedimentary rocks of the Yorktown Formation.

Coastal Plain Soil Properties

Soils present on this project are typical of Coastal Plain origin. These soils derived from weathering of underlying sedimentary strata. These soils consist of orange-tan, tan, white, and brown, loose to dense fine sands (A-3) and silty sands (A-2-4). The cohesive soils consist of tan, brown, orange-tan, sandy silts (A-4) and sandy, silty clays (A-6, A-7). The coastal plain clays have low to moderate plasticity indices ranging from (11-29).

Alluvial Soils

Alluvial soils are present in the tributaries and creek beds of Fork Swamp. These soils consist of loose, tan, brown, fine, to coarse sands (A-3), and silty sands (A-2-4). Underneath these soils are soft to stiff tan, and gray sandy, silty clays (A-6, A-7). Organic soils are found within the immediate vicinity of these creeks. The soils consist of approximately 1 to 3 ft. of black medium stiff to stiff sandy silts (A-4) and sandy clays (A-6). The organic content for these soils range from 7 – 9 percent. These soils have low plasticity indices that range from (9-12)

Groundwater

Groundwater was typically greater than six feet in the upper elevations of the project. The exception is for the lower elevations adjacent to a tributary of Fork Swamp.

Respectfully Submitted,

J. B. Barfield
Project Geologist

LTP/JBB/kw
File: U-3613C inv. doc

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA SUMMARY OF EARTHWORK IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)					WASTE (CUBIC YARDS)		
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
PHASE I														
WIDEN -L- RIGHT														
SUMMARY NO. 1														
-L- 12+00.00	-L- 16+20.70	473			47	426							47	47
TOTAL SUMMARY NO. 1		473			47	426							47	47
SUMMARY NO. 2														
-L- 27+04.00	-L- 30+90.00	109			11	98	39		39	49		49	11	60
-L- 31+68.00	-L- 33+95.00	20			2	18	38		38	48	30		2	2
-L- 38+00.00	-L- 38+90.00	10			1	9	18		18	23	14		1	1
-L- 39+33.00	-L- 39+66.00	2				2	5		5	6	4			
-L- 46+00.00	-L- 46+58.00	6			1	5	23		23	29	24		1	1
TOTAL SUMMARY NO. 2		147			15	132	123		123	155	72	49	15	64
SUMMARY NO. 3														
-L- 47+20.00	-L- 49+68.00	35			3	32	58		58	73	41		3	3
TOTAL SUMMARY NO. 3		35			3	32	58		58	73	41		3	3
SUMMARY NO. 4														
-L- 51+50.00	-L- 81+19.00	1556		1585	156	1400	2076		2076	2595	1195		1741	1741
TOTAL SUMMARY NO. 4		1556		1585	156	1400	2076		2076	2595	1195		1741	1741
SUMMARY NO. 5														
-L- 82+66.00	-L- 88+44.00	178		245	36	142	348		348	435	293		281	281
-L- 89+97.00	-L- 94+29.00	116		127	23	93	220		220	275	182		150	150
-L- 97+26.00	-L- 98+91.00	17		183	3	14	213		213	266	252		186	186
TOTAL SUMMARY NO. 5		311		555	62	249	781		781	976	727		617	617
SUMMARY NO. 6														
-L- 116+46.00	-L- 138+37.00	839		1020	168	671	1716		1716	2145	1474		1188	1188
-L- 140+90.00	-L- 143+25.00	93			19	74	2		2	3		71	19	90
TOTAL SUMMARY NO. 6		932		1020	187	745	1718		1718	2148	1474	71	1207	1278
PHASE II														
CONSTRUCT -L- LEFT														
SUMMARY NO. 7														
-L- 12+00.00	-L- 16+20.70	63			6	57	177		177	221	164		6	6
-Y- 10+18.01	-Y- 11+00.00	3				3	36		36	45	42			
-Y1- 18+48.72	-Y1- 26+25.00	284			28	256	221		221	276	20		28	28
TOTAL SUMMARY NO. 7		350			34	316	434		434	542	226		34	34

Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

DIVISION OF HIGHWAYS STATE OF NORTH CAROLINA **SUMMARY OF EARTHWORK** IN CUBIC YARDS

LOCATION		EXCAVATION (CUBIC YARDS)					EMBANKMENT (CUBIC YARDS)				WASTE (CUBIC YARDS)			
STATION	STATION	TOTAL UNCLASSIFIED	ROCK	UNDERCUT	UNSUITABLE UNCLASSIFIED	SUITABLE UNCLASSIFIED	TOTAL EMBANKMENT	ROCK EMBANKMENT	EARTH EMBANKMENT	EMBANKMENT PLUS 25%	BORROW	SUITABLE	UNSUITABLE	TOTAL
SUMMARY NO. 8														
-L- 17+25.00	-L- 49+82.00	5210		5093	521	4689	13227		13227	16534	11845		5614	5614
-Y1A- 10+34.00	-Y1A- 11+00.00	12			1	11	28		28	35	24		1	1
-Y2- 10+34.03	-Y2- 11+67.37	73			7	66	96		96	120	54		7	7
TOTAL SUMMARY NO. 8		5295		5093	529	4766	13351		13351	16689	11923		5622	5622
SUMMARY NO. 9														
-L- 49+92.00	-L- 81+85.97	701		2493	70	631	6347		6347	7934	7303		2563	2563
-Y6- 14+08.98	-Y6- 17+66.61	278			28	250	406		406	508	258		28	28
TOTAL SUMMARY NO. 9		979		2493	98	881	6753		6753	8442	7561		2591	2591
SUMMARY NO. 10														
-L- 81+85.97	-L- 111+00.00	7511		2555	1502	6009	4878		4878	6098	89		4057	4057
-Y9- 10+34.01	-Y9- 11+00.00	14			3	11	3		3	4		7	3	10
TOTAL SUMMARY NO. 10		7525		2555	1505	6020	4881		4881	6102	89	7	4060	4067
SUMMARY NO. 11														
-L- 111+00.00	-L- 141+00.00	3432		1818	686	2746	4274		4274	5343	2597		2504	2504
TOTAL SUMMARY NO. 11		3432		1818	686	2746	4274		4274	5343	2597		2504	2504
SUMMARY NO. 12														
-L- 141+00.00	-L- 151+70.00	218			44	174	440		440	550	376		44	44
TOTAL SUMMARY NO. 12		218			44	174	440		440	550	376		44	44
PHASE III														
CONSTRUCT -L- RIGHT														
SUMMARY NO. 13														
-L- 12+00.00	-L- 16+20.70	186			19	167	256		256	320	153		19	19
-Y1- 17+00.00	-Y1- 18+48.72	18			2	16	12		12	15		1	2	3
TOTAL SUMMARY NO. 13		204			21	183	268		268	335	153	1	21	22
SUMMARY NO. 14														
-L- 17+25.00	-L- 49+82.00	843			84	759	4259		4259	5324	4565		84	84
TOTAL SUMMARY NO. 14		843			84	759	4259		4259	5324	4565		84	84
SUMMARY NO. 15														
-L- 49+92.00	-L- 81+85.97	770			77	693	3841		3841	4801	4108		77	77
-Y4- 11+00.00	-Y4- 12+24.90						287		287	359	359			
-Y5- 11+00.00	-Y5- 11+66.53						70		70	88	88			
-Y6- 9+40.00	-Y6- 13+40.92	405			40	365	144		144	180		185	40	225
TOTAL SUMMARY NO. 15		1175			117	1058	4342		4342	5428	4555	185	117	302

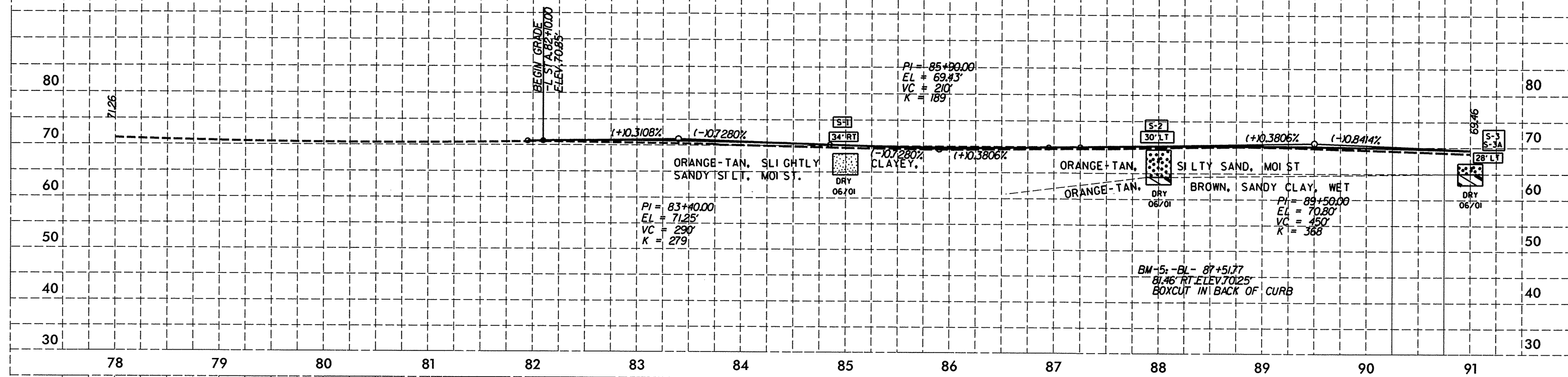
Note: Approximate quantities only. Unclassified Excavation, Fine Grading, Clearing and Grubbing, Breaking of Existing Pavement, and Removal of Existing Pavement will be paid for at the contract lump sum price for "Grading."

5/28/99

PRELIMINARY PLANS
DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
DO NOT USE FOR R/W ACQUISITION

-L- SR 1708 (FIRE TOWER RD.)

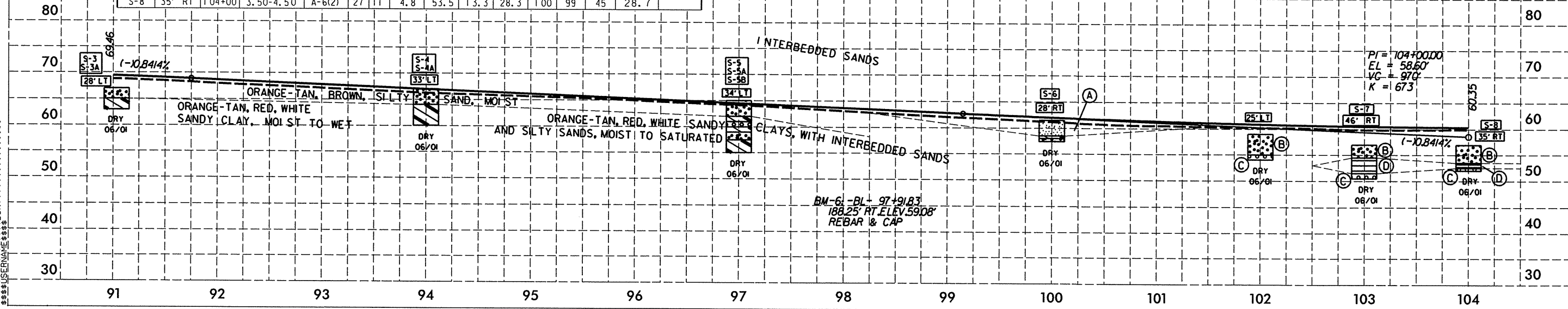
SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-1	34' RT	85+00	0.00-4.00	A-4(0)	22	8	7.1	57.6	13.1	22.2	100	98	38	18.6	
S-2	30' LT	88+00	5.20-6.60	A-6(6)	30	14	7.1	33.1	31.5	28.3	100	97	63		
S-3	28' LT	91+00	2.00-3.50	A-6(7)	29	11	0.2	34.7	36.8	28.3	100	100	77		
S-3A	28' LT	91+00	3.50-4.10	A-6(2)	30	15	8.5	54.5	8.7	28.3	100	98	39		
S-4	33' LT	94+00	3.00-5.00	A-6(4)	36	19	5.3	53.3	9.1	32.3	100	99	44	21.5	



-L- SR 1708 (FIRE TOWER RD.)

SOIL TEST RESULTS															
SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-4A	33' LT	94+00	5.00-7.00	A-6(3)	38	21	9.1	55.8	4.8	30.3	100	98	37		
S-5	34' LT	97+00	0.00-3.00	A-2-4(0)	20	NP	33.7	48.3	5.9	12.1	83	73	17		
S-5A	34' LT	97+00	5.00-6.00	A-6(11)	38	23	4.2	42.4	19.0	34.3	100	99	60	26.3	
S-5B	34' LT	97+00	6.00-7.50	A-2-4(0)	24	9	14.3	57.4	10.1	18.2	96	91	31		
S-6	28' RT	100+00	0.00-3.00	A-4(0)	21	3	6.1	63.2	12.5	18.2	100	99	36		
S-7	46' RT	103+00	2.50-5.50	A-6(2)	34	11	4.4	51.3	24.0	20.2	100	99	47	31	
S-8	35' RT	104+00	3.50-4.50	A-6(2)	27	11	4.8	53.5	13.3	28.3	100	99	45	28.7	

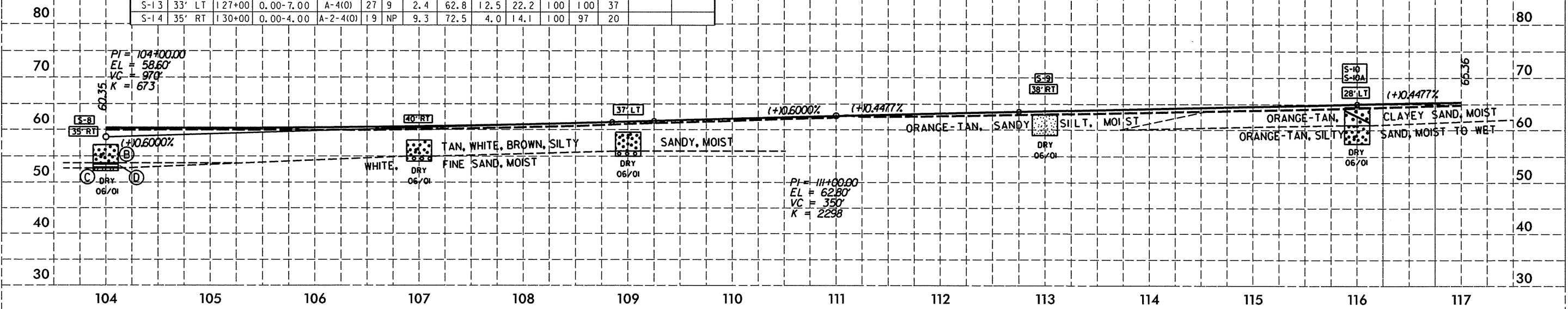
- (A) LT. TAN TO TAN-BROWN, SANDY SILT, MOIST
- (B) TAN, WHITE, FINE, SILTY SAND, MOIST TO WET
- (C) WHITE, TAN, FINE TO COARSE SAND, MOIST TO SATURATED
- (D) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOIST



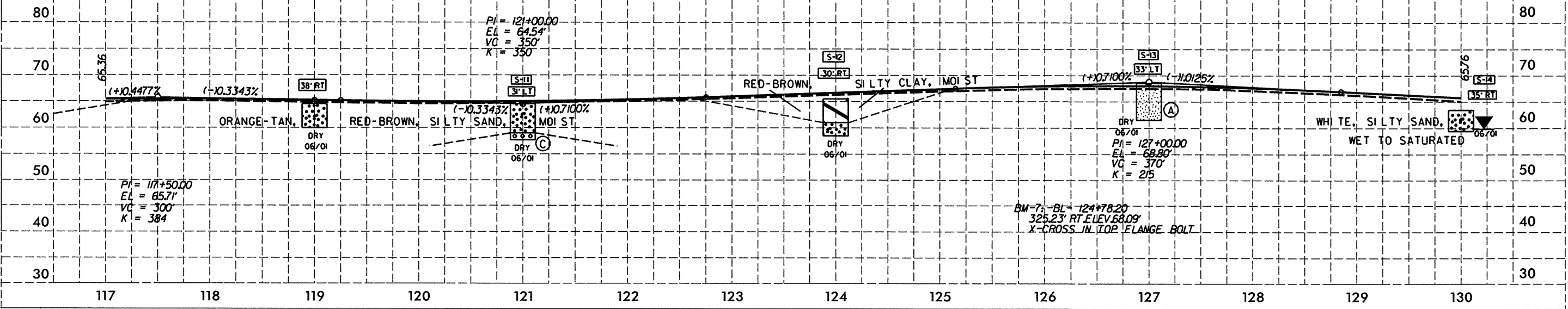
-L- SR 1708 (FIRETOWER RD.)

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-8	35' RT	104+00	3.50-4.50	A-6(2)	27	11	4.8	53.5	13.3	28.3	100	99	45		
S-9	38' RT	113+00	0.00-4.00	A-4(0)	22	6	1.2	60.4	16.2	22.2	100	100	43		
S-10	28' LT	116+00	0.00-3.50	A-2-6(1)	35	16	5.1	64.6	2.0	28.3	100	100	31		
S-10A	28' LT	116+00	3.50-7.00	A-2-4(0)	21	NP	37.2	46.9	1.8	14.1	99	87	17		
S-11	31' LT	121+00	0.00-5.50	A-2-4(0)	18	NP	1.8	83.9	7.2	7.1	100	100	17		
S-12	30' RT	124+00	0.00-4.50	A-7-6(4)	41	21	1.0	61.8	4.8	32.3	100	100	40		
S-13	33' LT	127+00	0.00-7.00	A-4(0)	27	9	2.4	62.8	12.5	22.2	100	100	37		
S-14	35' RT	130+00	0.00-4.00	A-2-4(0)	19	NP	9.3	72.5	4.0	14.1	100	97	20		

- (A) LTL TAN TO TAN-BROWN, SANDY SILT, MOIST
- (B) TAN, WHITE, FINE, SILTY SAND, MOIST TO WET
- (C) WHITE, TAN, FINE TO COARSE SAND, MOIST TO SATURATED
- (D) ALLUVIAL; DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOIST



-L- SR 1708 (FIRETOWER RD.)



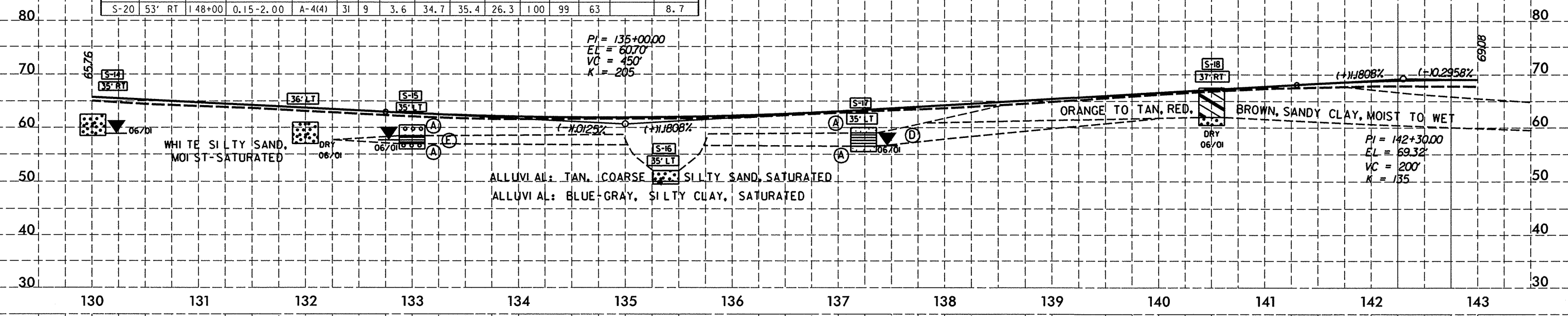
5/28/09 SYSTEMS DESIGN ENGINEERS

PRELIMINARY PLANS
 DO NOT USE FOR CONSTRUCTION
INCOMPLETE PLANS
 DO NOT USE FOR R/W ACQUISITION

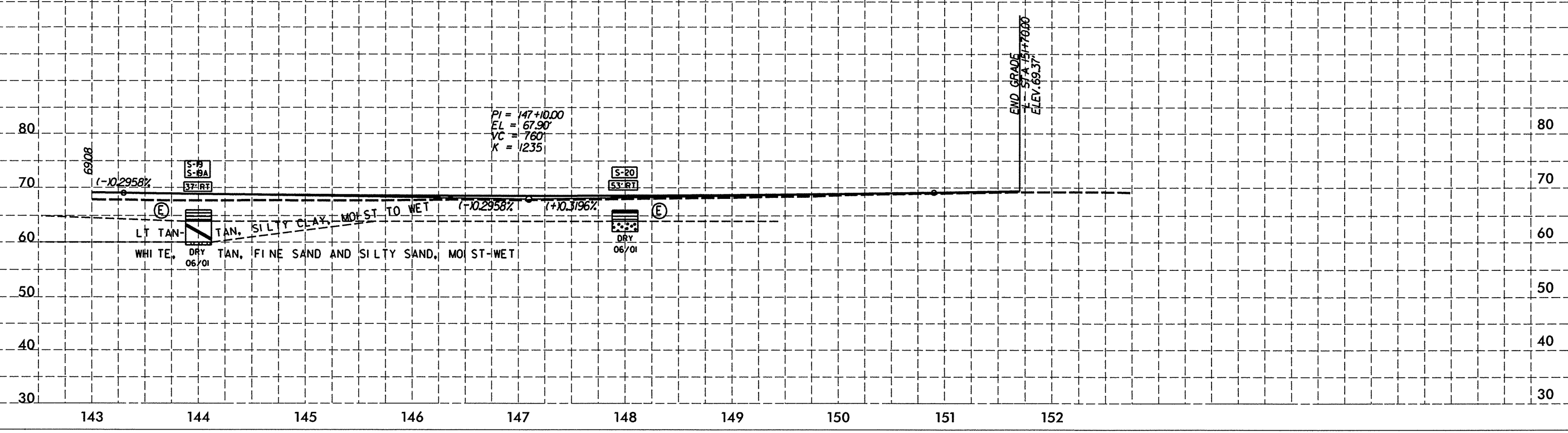
-L- SR 1708 (FIRE TOWER RD.)

SAMPLE NO.	OFFSET	STATION	DEPTH INTERVAL	AASHTO CLASS.	LL	P.I.	% BY WEIGHT				% PASSING (SIEVES)			% MOISTURE	% ORGANIC
							C.SAND	F.SAND	SILT	CLAY	10	40	200		
S-14	35' RT	130+00	0.00-4.00	A-2-4(0)	19	NP	9.3	72.5	4.0	14.1	100	97	20		
S-15	35' LT	133+00	2.00-3.50	A-4(0)	28	8	9.5	52.7	21.6	16.2	100	98	40	35.3	7
S-16	35' LT	135+40	2.00-2.50	A-7-6(14)	45	29	6.1	36.6	14.9	42.4	100	99	59		
S-17	35' LT	137+24	1.00-3.50	A-6(1)	31	12	15.2	46.7	18.0	20.2	100	97	39	33.6	7
S-18	37' RT	140+50	0.00-5.50	A-6(2)	31	14	1.4	60.6	9.7	28.3	100	100	41		
S-19	37' RT	144+00	2.00-5.00	A-7-6(7)	43	23	6.9	47.3	7.5	38.4	100	98	48		
S-19A	37' RT	144+00	5.00-6.00	A-7-6(7)	43	26	5.5	52.5	7.7	34.3	100	98	45		
S-20	53' RT	148+00	0.15-2.00	A-4(4)	31	9	3.6	34.7	35.4	26.3	100	99	63		8.7

- (A) LT. TAN TO TAN-BROWN, SANDY SILT, MOI ST
- (D) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY CLAY, MOI ST
- (E) ALLUVIAL: DARK BROWN TO BLACK, ORGANIC, SANDY SILT, MOI ST TO WET



-L- SR 1708 (FIRE TOWER RD.)



5/28/91
 CUTLINE
 CONSTRUCTION
 PERMITS
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